

SECTION NO.11
ELECTRICAL WORKS

	Unit	Quantity	Rate	Amount
<u>SECTION NO.11</u>				
<u>ELECTRICAL WORKS</u>				
<u>BILL NO. 1</u>				
<u>ELECTRICAL WORK</u>				
Tenders are advised to carefully study the full intent and meaning of "Construction Works: Specifications (PW371-A Edition 2.1 of July 2014 and PW371-B Edition 2.2 of December 2015)" before pricing this bill as these standards shall apply to all items of work on this project. Additional Supplementary Preambles have been incorporated. Where these are at variance with PW371-A & B such Supplementary Preambles will take precedence.				
Note: All items shall be priced for whatever cost may be considered necessary for Preliminary and General items to carry out the Electrical Installation in full, as detailed in the drawings, Specifications and Schedules, which shall include, but shall not be limited, to the following:				
Note: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No. 160 for calculation of Contract Price Adjustments on the Haylett Formula				
<u>ELECTRICAL PRELIMINARY AND GENERAL</u>				
1				
Site establishment - including but not limited to latrines, water, generators, fuel, ALL safety aspects, site office, clerks of works. Careful planning will be required from building contractor to ensure that all completion dates are achieved. Make allowance in your price to work after hours and weekends.	Prov Sum			40 000 00
2				
Any additional builders work over and above main contractors, including make good after chasing, plaster to builders satisfaction.	Prov Sum			15 000 00
3				
For marking up of Engineers drawings during construction and compiling of As-built drawings	Prov Sum			5 000 00
4				
Any necessary calculations or drawings requested by the Engineer.	Prov Sum			5 000 00
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5	Electrical Certificate of Compliance	Prov Sum			5 000 00
	<u>FOR THE CODING AND LABELLING OF:</u>				
6	All plant and equipment	Prov Sum			12 000 00
7	Wiring	Prov Sum			4 500 00
	<u>FOR HEALTH AND SAFETY:</u>				
8	All Health and Safety related activities such as H&S File, Toolbox Talks, etc.	Prov Sum			10 000 00
	<u>FOR ENVIRONMENTAL:</u>				
9	For managing environmental aspects	Prov Sum			3 000 00
	<u>FOR DECOMMISSIONING:</u>				
10	For stripping, removal and making safe of any damaged existing infrastructure	Prov Sum			80 000 00
	<u>CABLING</u>				
	Circuit wiring along with earth wire with the following sizes of XLPE insulated copper conductor single core/ multi strand cable in surface/recessed PVC conduit as required.				
11	Supply and install 2.5 sq.mm GP wire for wiring of lighting	m	3 377		
12	Supply and install 4 sq.mm GP wire for wiring of small power plus Decanting floodlighting	m	3 730		
13	Supply and install M20 BOSAL conduit complete with elbows, junction boxes, clamps and fittings	m	507		
14	Supply and install M25 BOSAL conduit complete with elbows, junction boxes, clamps and fittings	m	373		
15	Supply and install M20 PVC conduit complete with elbows, junction boxes, clamps and fittings	m	1 182		
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		Unit	Quantity	Rate	Amount
16	Supply and install M25 PVC conduit complete with elbows, junction boxes, clamps and fittings	m	880		
17	Supply and install M32 PVC conduit complete with elbows, junction boxes, clamps and fittings	m	34		
18	Chasing 50mm wide x 40mm deep, and make good	m	389		
19	Supply and install 6sq mm 1-phase 2-core + ECC SWA CU cable compatible with SANS 1507-3	m	111		
20	Supply and install cable terminations set for 6sq.mm 2 core Cu cable	No	6		
21	Supply and install 10sq mm 1-phase 2-core + ECC SWA CU cable compatible with SANS 1507-3	m	300		
22	Supply and install cable terminations set for 10sq.mm 2 core Cu cable	No	12		
23	Supply and install 16sq mm 1-phase 2-core + ECC SWA CU cable compatible with SANS 1507-3	m	411		
24	Supply and install cable terminations set for 16sq.mm 2 core Cu cable	No	10		
25	Supply and install 25sq mm 1-phase 2-core + ECC SWA CU cable compatible with SANS 1507-3	m	102		
26	Supply and install cable terminations set for 25sq.mm 2 core Cu cable	No	4		
27	Supply and install 35sq mm 1-phase 2-core + ECC SWA CU cable compatible with SANS 1507-3	m	194		
28	Supply and install cable terminations set for 35sq.mm 2 core Cu cable	No	2		
29	Supply and install 50sq mm 1-phase 2-core + ECC SWA CU cable compatible with SANS 1507-3	m	242		
30	Supply and install cable terminations set for 50sq.mm 1-phase 2 core Cu cable	No	2		
31	Supply and install 35sq mm 3-phase 4-core + ECC SWA CU cable compatible with SANS 1507-3	m	220		
32	Supply and install M160 PVC Sleeves for DBs	m	80		
33	Supply and install M110 PVC Sleeves for DBs	m	220		
34	Supply and install M75 PVC Sleeves for DBs	m	130		
35	Supply and install M50 PVC Sleeves for DBs	m	31		
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		Unit	Quantity	Rate	Amount
36	Supply and install 50mm light duty cable tray	m	13		
37	Supply and install electrical manhole	No	10		
38	Trenching for Power M160 + M75 + M50 PVC- 100mm wide x 500mm deep, including bedding soil and backfill	m	331		
	<u>LIGHTING</u>				
	<u>LIGHT FITTINGS</u>				
	<u>Supply and installation of the following lamps and light fittings with Electronic Control Gear, starter, capacitor, tubes/lamps, reflector, diffuser, holder etc. complete with all fixing accessories. Includes installation of the 2.5 sq.mm wiring to all light points as indicated in the lighting layout drawing. All interior lighting shall be mounted onto ceilings.</u>				
39	20W LED bulkhead	No	83		
40	4ft 40W LED linear light fitting	No	174		
41	5ft 60W LED linear light fitting	No	12		
42	200W LED Floodlight	No	2		
43	50W LED Floodlight	No	9		
	<u>PHOTO SENSORS</u>				
44	Supply and installation of Daylight photo sensors, for the control of outdoor lighting circuits. Switch LS10C Photo sensor-10A, IP56, or similar.	No	11		
	<u>OCCUPANCY SENSORS</u>				
45	Supply and installation of Passive infrared Occupancy sensors complete with power packs and auxiliary relays, for control of lighting circuits	No	10		
	<u>LIGHT SWITCHES</u>				
	<u>Supply and install crabtree light switches complete with coverplate. Includes wiring of the switch points</u>				
46	1-lever 1-way switch, 100x50mm with cover plate, white	No	70		
47	1-lever 2way switch, 100x50mm with cover plate, white	No	4		
48	Testing and Commissioning of Lighting Installation	Item			
49	4x2 PVC bxs complete with fittings	No	70		
50	5A plugs for light fitting	No	269		
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	Supply and installation of crabtree range (or similar) small power equipment in accordance with SANS10142-1.				
	<u>SMALL POWER</u>				
51	DSO, 16A switchable 3-pin euro socket outlet with cover plate, white (flush mounted)	No	83		
52	Docking station with one normal single switched socket outlet and RJ45 data point	No	1		
53	Wall mounted fan switches	No	44		
54	Power PVC Trunking	m	30		
55	2 Tier Power skirting including all accessories	m	70		
56	SSO, 16A 1Phase switchable 3-pin single Mounted in Power Skirting	No	75		
57	EURO 1Phase switchable Mounted in Power Skirting	No	75		
58	LAN Point flush mounted in power skirting	No	66		
59	LAN Point flush mounted on wall	No	1		
60	4x4 PVC boxes complete with fittings	No	83		
61	Testing and Commissioning of Small Power Installation	Prov Sum			2 500 00
62	Bell or school siren including full intercom system supplied and installed by specialist.	Prov Sum			50 000 00
	ISOLATORS Supply and installation of flush or surface mounted Isolators in either 100 x 100, 100 x 50, round box or wiring channel, excluding box (for flush type) and conduit connections, but including cover plate.				
63	40A 1Phase Isolators Electrical Points	No	2		
64	15A 1Phase Isolators Electrical Points	No	4		
65	60A 3Phase Isolators Electrical Points	No	1		
	<u>DISTRIBUTION BOARDS</u>				
	Supply and install Distribution Boards in accordance with SANS10142 as per the following:				
66	KI- MP 80A dual phase as per drawing D34105.00-312-01	No	1		
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		Unit	Quantity	Rate	Amount
67	KI-PM 80A single phase as per drawing D34105.00-312-13	No	1		
68	DB-AD1 80A single phase as per drawing D34105.00-312-02	No	1		
69	DB-AD2 60A single phase as per drawing D34105.00-312-03	No	1		
70	DB-A 40A single phase as per drawing D34105.00-312-04	No	1		
71	DB-B 40A single phase as per drawing D34105.00-312-05	No	1		
72	DB-C 40A single phase as per drawing D34105.00-312-05	No	1		
73	DB-D 40A single phase as per drawing D34105.00-312-05	No	1		
74	DB-E 40A single phase as per drawing D34105.00-312-05	No	1		
75	DB-I 40A single phase as per drawing D34105.00-312-06	No	1		
76	DB-K1 40A single phase as per drawing D34105.00-312-07	No	1		
77	DB-K2 40A single phase as per drawing D34105.00-312-08	No	1		
78	DB-K3 40A single phase as per drawing D34105.00-312-09	No	1		
79	DB-KN 40A single phase as per drawing D34105.00-312-11	No	1		
80	DB-GH 20A single phase as per drawing D34105.00-312-12	No	1		
81	DB-CP 60A single phase as per drawing D34105.00-312-10	No	1		
82	DB-UPS 40A single phase as per drawing D34105.00-312-15	No	1		
83	Decanting Kiosk 63A 3 phase as per drawing D34105.00-312-14	No	1		
	Supply and install lightning protection system in accordance with SANS 10313. Copper Earthing straps to be bonded and earthed according to SANS10142.				
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	<u>LIGHTNING PROTECTION AND EARTHING</u>				
84	Bonding Points	No	64		
85	Earth Test Points	No	64		
86	Clamps including all accessories	No	313		
87	10mm sq Insulated Aluminium down conductor	m	336		
88	50mm sq BCEW cable	m	647		
89	10mm sq Bare Aluminium conductor	m	810		
90	1.5m Long Copper Earth Rods	No	197		
91	Exothermic Welds	No	64		
92	300mm wide X 600mm deep trenching	m	647		
	<u>FIRE DETECTION</u>				
93	PRELIMINARY AND GENERAL.	Prov Sum			20 000 00
	a) Registration as contractor				
	b) Insurance				
94	SITE SUPERVISION	Prov Sum			10 000 00
	a) Site supervision by accredited person				
	b) Quality assurance				
95	TEST AND COMMISSION	Prov Sum			10 000 00
	Provision of calibrated test equipment, and Certificate of Compliance (Electronic Work). Including testing with NSCR and recording references.				
96	SOFTWARE	Item			
	As built to have Installation, Operating and Owner's manuals supplied. Mimic layout, zone allocation, asset register, test ref's and report supplied. All to be on software equal to manuals produced..				
97	MANUALS AND DRAWINGS	Item			
	Manuals - Operating, Installation and Maintenance and Updated drawings of as built to be supplied. This includes the asset register, zone and wiring diagrams as well as test refs and test reports.				
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98	TRAINING	Prov Sum			10 000 00
	Training of operator, client, maintenance staff as required.				
99	LABELLING and NUMBERING	Prov Sum			5 000 00
	All labelling and numbering to be properly done. Legend updated.				
100	GUARANTEE	Item			
	Guarantee for the next 12 months including quarterly maintenance checks.				
101	ELECTRICAL COC	Item			
	Issuing of an electrical COC for all electrical work done				
102	Aritech FP 1200 series 2 loop panel	No	1		
103	Aritech NE2011 RS485 Network Card	No	1		
	<u>Apollo XP95 series devices</u>				
104	Ionization	No	20		
105	Multi Criteria	No	1		
106	Detector base	No	21		
107	Input / Output module	No	1		
108	Switch monitor (Single channel)	No	1		
109	Loop Isolator	No	2		
110	Loop Isolator base	No	2		
111	Manual Call point break-glass unit	No	3		
	<u>General pheripheral devices</u>				
112	Remote Indicator Lights - Ceiling mounted	No	6		
113	Red Strobe Light 24VDC	No	3		
114	Apollo XP95A Sounder Beacon (Sounder 24VDC 10W)	No	4		
115	Blue Ginger Power Supply 3A 12VDC suitable for harsh environments c/w over voltage protection and spike arrestors.	No	1		
116	Logbook holder (see standard fire drawings)	No	1		
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